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FIG. 1A

1 AATTCAACCT TAACCTTCT TATTCTGTAG TATTCAAAGG GCACAGAGCG
51 GGGGTTTGAG CCCCTCCTG GGGGAAGAAA GTCATTAATA TTGAATCTCA
101 TCATGTCCAC CGCCCAGGAG GGCCTCTGA CTGTGGTTCG CTTGACAGTA
151 TATCCGAAGG TGCAGGAGAG GCGGGTGTG AAGATGCCAT TTTTCCCTCT
201 CCAGCGGTAA CGGTGGCGGG GGTGGACGAG CCAGGGGCGG CGGCGGAGGA
251 TCTGGCCAAG ATGGCTGCGG GGGCGGTGTC TTCTTCTCCG GTAACGCCCTC
301 CTTGGATAACG TCATATCTGA AAACGAAAGA AGTGCCTGT AAGTATTACC
351 AGCGCACTTC GCCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG
401 CCGAGCAAGA AGAATGGAAG AAGCGGACCC CAACCCATA AAAGGTGGGT
451 GTTCACTCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGATC
501 TTCCAATATC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG
551 GAAGGACGAA CACCTCACCT CCAGGGTTC GCTAATTTG TGAAGAAGCA
601 GACTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA
651 AAGCGAAAGG AACAGATCAG CAGAATAAAG AATACTGCAG TAAAGAAGGC
701 AACTTACTGA TGGAGTGTGG AGCTCTAGA TCTCAGGGAC AACGGAGTGA
751 CCTGTCTACT GCTGTGAGTA CCTTGTGGA GAGCGGGAGT CTGGTGACCG
801 TTGCAGAGCA GCACCCGTGA ACCTTGTCA GAAATTTCCG CGGGCTGGCT
851 GAACTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACTAA
901 TGTacACGTC ATTGTGGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG
951 CTAATTTGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAACAAG
1001 TGGTGGGATG GTTACCATGG TGAAGAAGTG GTTGTATTG ATGACTTTA
1051 TGGCTGGCTG CCCTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT
1101 TGACTGTAGA GACTAAAGGT GGAACGTAC CTTTTTGGC CCGCAGTATT
1151 CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT
1201 CCCAGCTGTA GAAGCTCTT ATCGGAGGAT TACTTCCTTG GTATTTGGGA

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FIG. 1B

1251 AGAATGCTAC AGAACAAATCC ACGGAGGAAG GGGGCCAGTT CGTCACCCCTT
1301 TCCCCCCCCAT GCCCTGAATT TCCATATGAA ATAAATTACT GAGTCTTTTT
1351 TATCACTTCG TAATGGTTTT TATTATTCA TAAAGGGTTAA GTGGGGGGTC
1401 TTTAAGAGTTA AATTCTCTGA ATTGTACATA CATGGTTACA CGGATATTGT
1451 ATTCCCTGGTC GTATATACTG TTTTCGAACG CAGTGCCGAG GCCTACGTGG
1501 TCTACATTTC CAGCAGTTTG TAGTCTCAGC CACAGCTGGT TTCTTTTGT
1551 GTTTGGTTGG AAGTAATCAA TAGTGGAAATC TAGGACAGGT TTGGGGGTAA
1601 AGTAGCGGGA GTGGTAGGAG AAGGGCTGGG TTATGGTATG GCGGGAGGAG
1651 TAGTTTACAT AGGGGTACATA GGTGAGGGCT GTGGCCTTTG TTACAAAGTT
1701 ATCATCTAGA ATAACAGCAC TGGAGCCCAC TCCCCTGTCA CCCTGGGTGA
1751 TCGGGGAGCA GGGCCAG

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FIG.2A

1 AATTCAACCT TAACCTTTCT TATTCTGTAG TATTCAAAGG GCACAGAGCG
51 GGGGTITGAG CCCCTCCTG GGGGAAGAAA GTCATTAATA TTGAATCTCA
101 TCATGTCCAC CGCCCAGGAG GGCCTTTGA CTGTGGTTCG CTTGACAGTA
151 TATCCGAAGG TGCGGGAGAG GCGGGTGTG AAGATGCCAT TTTCCCTCT
201 CCAGCGGTAA CGGTGGCGGG GGTGGACGAG CCAGGGGCGG CGGGGGAGGA
251 TCTGGCCAAG ATGGCTGCAG GGGCGGTGTC TTCTTCTCCG GTAACGCCTC
301 CTTGGATAACG TCATATCTGA AAACGAAAGA AGTGCCTGT AAGTATTACC
351 AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG
401 CCCAGCAAGA AGAATGGAAG AAGCGGACCC CAACCCATA AAAGGTGGGT
451 GTTCACTCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGATC
501 TTCCAATATC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG
551 GAAGGACGAA CACCTCACCT CCAGGGGTTG GCTAATTTG TGAAGAAGCA
601 GACTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA
651 AAGCGAAAGG AACAGATCAG CAGAATAAAG AATACTGCAG TAAAGAAGGC
701 AACTTACTGA TGGAGTGTGG AGCTCCTAGA TCTCAGGGAC AACGGAGTGA
751 CCTGTCTACT GCTGTGAGTA CCTTGTGGA GAGCGGGAGT CTGGTGACCG
801 TTGCAGAGCA GCACCCGTGA ACGTITGTCA GAAATTTCGG CGGGCTGGCT
851 GAACTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACTAA
901 TGTACACGTC ATTGTGGGSC CACCTGGGTG TGGTAAAAGC AAATGGGCTG
951 CTAATTTCGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAAAG
1001 TGGTGGGATG GTTACCATGG TGAAGAAGTG GTTGTATTG ATGACTTTA
1051 TGGCTGGCTG CCCTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT
1101 TGACTGTAGA GACTAAAGGT GGAACGTGAC CTTTTTGCG CCGCAGTATT
1151 CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT
1201 CCCAGCTGTA GAAGCTCTT ATCGGAGGAT TACTTCCTTG GTATTTGGAA

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FIG. 2B

1251 AGAATGCTAC AGAACAAATCC ACGGAGGAAG GGGGCCAGTT CGTCACCCCTT
1301 TCCCCCCCCAT GCCCTGAATT TCCATATGAA ATAAATTACT GAGTCTTTTT
1351 TATCACTTCG TAATGGTTTT TATTATTCAAT TAAGGGTTAA GTGGGGGGTC
1401 TTTAAGAGTTA AATTCTCTGA ATTGTACATA CATGGTTACA CGGATATTGT
1451 ATTCCCTGGTC GTATATACTG TTTTCGAACG CAGTGCCGAG GCCTACGTGG
1501 TCTACATTTTC CAGTAGTTTG TAGTCTCAGC CACAGCTGAT TTCTTTGTT
1551 GTTTGGTTGG AAGTAATCAA TAGTGGAAATC TAGGACAGGT TTGGGGGTAA
1601 AGTAGCGGGA GTGGTAGGAG AAGGGCTGGG TTATGGTATG GCGGGAGGAG
1651 TAGTTTACAT AGGGGTCAATA GGTGAGGGCT GTGGCCTTTG TTACAAAGTT
1701 ATCATCTAGA ATAACAGCAC TGGAGCCCAC TCCCCTGTCA CCCTGGGTGA
1751 TCGGGGAGCA GGGCCAG

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FIG. 3A

1 AATTCAACCT TAACCTTTT TATTCTGTAG TATTCAAAGG GTATAGAGAT
51 TTTGTGGTC CCCCCCTCCCG GGGGAACAAA GTCGTCAATA TTAAATCTCA
101 TCATGTCCAC CGCCCAGGAG GGCCTTCTGA CTGTGGTAGC CTTGACAGTA
151 TATCCGAAGG TGCGGGAGAG CGGGGTGTG AAGATGCCAT TTTTCCCTCT
201 CCAACGGTAG CGGTGGCGGG GGTGGACGAG CCAGGGCGG CGGCGGAGGA
251 TCTGGCCAAG ATGGCTGCGG GGGCGGTGTC TTCTTCTGCG GTAACGCCTC
301 CTTGGATAACG TCATAGCTGA AAACGAAAGA AGTGCCTGT AAGTATTACC
351 AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG
401 CCCAGCAAGA AGAATGGAAG AAGCGGACCC CAACCACATA AAAGGTGGGT
451 GTTCACGCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGAGC
501 TCCAATCTC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG
551 GAAGGACGAA CACCTCACCT CCAGGGGTTTC GCTAATTTG TGAAGAAGCA
601 AACTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA
651 AAGCCAAAGG AACTGATCAG CAGAATAAAG AATATTGCAG TAAAGAAGGC
701 AACTTACTTA TTGAATGTGG AGCTCCTCGA TCTCAAGGAC AACGGAGTGA
751 CCTGTCTACT GCTGTGAGTA CCTTGTGGA GAGCGGGAGT CTGGTGACCG
801 TTGCAGAGCA GCACCCGTGA ACCTTGTCA GAAATTCCG CGGGCTGGCT
851 GAACTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACCAA
901 TGTACACGTC ATTGTGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG
951 CTAATTTGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAACAAG
1001 TGGTGGGATG GTTACCATGG TGAAGAAGTG GTTGTATTG ATGACTTTA
1051 TGGCTGGCTG CCGTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT
1101 TGACTGTAGA GACTAAAGGT GGAACGTGAC CTTTTTGGC CCGCAGTATT
1151 CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT
1201 CCCAGCTGTA GAAGCTCTCT ATCGGAGGAT TACTTCCTTG GTATTTGGAA

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1251 AGAATGCTAC AGAACAAATCC ACGGAGGAAG GGGGCCAGTT CGTCACCCCTT
1301 TCCCCCCCCAT GCCCTGAATT TCCATATGAA ATAAATTACT GAGTCCTTTT
1351 TATCACTTCG TAATGGTTTT TATTATTCAAT TTAGGGTTTA AGTGGGGGGT
1401 CTTTAAGATT AAATTCTCTG AATTGTACAT ACATGGTTAC ACGGATATTG
1451 TAGTCCTGGT CGTATATACT GTTTTCAAC GCAGTGCCGA GCCCTACGTG
1501 GTCCACATTT CTAGAGGTTT GTAGCCTCAG CCAAAGCTGA TTCCCTTTGT
1551 TATTGGTTG GAAGTAATCA ATAGTGGAGT CAAGAACAGG TTTGGGTGTG
1601 AAGTAACGGG AGTGGTAGGA GAAGGGTTGG GGGATTGTAT GGCGGGAGGA
1651 GTAGTTTACA TATGGGTCAT AGGTTAGGGC TGTGGCCTTT GTTACAAAGT
1701 TATCATCTAG AATAACAGCA GTGGAGCCCA CTCCCTATC ACCCTGGGTG
1751 ATGGGGGAGC AGGGCCAG

FIG. 3B

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FIG. 4A

1 AATTCAACCT TAACCTTCT TATTCTGTAG TATTCAAAGG GTATAGAGAT
51 TTTGTTGGTC CCCCTCCCG GGGGAACAAA GTCGTCAATT TTAAATCTCA
101 TCATGTCCAC CGCCCAGGAG GCCGTTGTGA CTGTGGTACG CTTGACAGTA
151 TATCCGAAGG TGCGGGAGAG GCGGGTGTG AAGATGCCAT TTTCCCTCT
201 CCAACGGTAG CGGTGGCGGG GGTGGACGAG CCAGGGCGG CGGCGGAGGA
251 TCTGGCCAAG ATGGCTGCGG GGGCGGTGTC TTCTTCTGCG GTAACGCCTC
301 CTTGGATACG TCATAGCTGA AAACGAAAGA AGTGCCTGT AAGTATTACC
351 AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG
401 CCCAGCAAGA AGAATGGAAG AAGCGGACCC CAACCACATA AAAGGTGGGT
451 GTTCACGCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGAGC
501 TCCCAATCTC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG
551 GAAGGACGAA CACCTCACCT CCAGGGTTC GCTAATTTG TGAAGAAGCA
601 AACTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA
651 AAGCCAAAGG AACTGATCAG CAGAATAAAG AATATTGCAG TAAAGAAGGC
701 AACTTACTTA TTGAATGTGG AGCTCCTCGA TCTCAAGGAC AACGGAGTGA
751 CCTGTCTACT GCTGTGAGTA CCTTGTGGA GAGCGGGAGT CTGGTGACCG
801 TTGCAGAGCA GCACCCGTGA ACGTTGTCA GAAATTCCG CGGGCTGGCT
851 GAACTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACCAA
901 TGTACACGTC ATTGTGGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG
951 CTAATTTGC AGACCCGGAA ACCACATACT GGAAACCAACC TAGAAACAAG
1001 TGGTGGGATG GTTACCATGG TGAAGAAGTG GTTGTATTTG ATGACTTTA
1051 TGGCTGGCTG CCGTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT
1101 TGACTGTAGA GACTAAAGGT GGAACGTGAC CTTTTTGCG CCGCAGTATT
1151 CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT
1201 CCCAGCTGTA GAAGCTCTCT ATCGGAGGAT TACTTCTTG GTATTTGGA

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1251 AGAATGCTAC AGAACAAATCC ACGGAGGAAG GGGGCCAGTT CGTCACCCCTT
1301 TCCCCCCCCTT GCCCTGAATT TCCATATGAA ATAAATTACT GAGTCTTTTT
1351 TATCACTTCG TAATGGTTTT TATTATTCAT TTAGGGTTA AGTGGGGGTT
1401 CTTTAAGATT AAATTCTCTG AATTGTACAT ACATGGTTAC ACGGATATTG
1451 TAGTCCTGGT CGTATTTACT GTTTTCGAAC GCAGCGCCGA GGCCTACGTG
1501 GTCCACATTT CCAGAGGTTT GTAGTCTCAG CCAAAGCTGA TTCCCTTTGT
1551 TATTGGTTG GAAGTAATCA ATAGTGGAGT CAAGAACAGG TTTGGGTGTG
1601 AAGTAACGGG AGTGGTAGGA GAAGGGTTGG GGGATTGTAT GGCGGGAGGA
1651 GTAGTTACA TATGGTCAT AGGTTAGGGC TGTGGCTTT GTTACAAAGT
1701 TATCATCTAG AATAACAGCA GTGGAGCCCA CTCCCCATAC ACCCTGGGTG
1751 ATGGGGGAGC AGGGCCAG

FIG. 4B

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FIG. 5A

PCVPK-15	AATTCACTATTTAGCCTTCTAATACGGTAGTATTGGAAAGGTAGGGTAGGGGTTGGTG
IMP999-ECO	AATTCAACCTTAACCTTTTATTCTGTAGTATTCAAAGGTATAGAGATTGTTGGTC
IMP1010-ST	AATTCAACCTTAACCTTTCTTATTCTGTAGTATTCAAAGGTATAGAGATTGTTGGTC
IMP1011-48	AATTCAACCTTAACCTTTCTTATTCTGTAGTATTCAAAGGCACAGACGGGGTTGAG
IMP1011-48	AATTCAACCTTAACCTTTCTTATTCTGTAGTATTCAAAGGCACAGACGGGGTTGAG
*****	*****
PCVPK-15	CCGCCTGAGGGGGGGAGGAAGTGGCCATGTTGAATTGAGGTAGTTACATTCAAAGAT
IMP999-ECO	CCCCCTCCCAGGGGAAACAAGTCGTCAATTAAATCTCATCATGTCCACCGCCAGGAG
IMP1010-ST	CCCCCTCCCAGGGGAAACAAGTCGTCAATTAAATCTCATCATGTCCACCGCCAGGAG
IMP1011-48	CCCCCTCCTGGGGGAAAGAAAGTCATTAATTGAATCTCATCATGTCCACCGCCAGGAG
IMP1011-48	CCCCCTCCTGGGGGAAAGAAAGTCATTAATTGAATCTCATCATGTCCACCGCCAGGAG
*****	*****
PCVPK-15	GGC--TGCAGTATCCTCTTT-ATGGTAGTACAAATTCTGTAGAAAGGCAGGAATTG
IMP999-ECO	GGCGTTCTGACTGTGGTAGCCTTGACAGTATATCCGAAGGTGCGGGAGAGGCAGGTGTTG
IMP1010-ST	GGCGTTGTGACTGTGGTAGCCTTGACAGTATATCCGAAGGTGCGGGAGAGGCAGGTGTTG
IMP1011-48	GGCGTTCTGACTGTGGTAGCCTTGACAGTATATCCGAAGGTGCGGGAGAGGCAGGTGTTG
IMP1011-48	GGCGTTCTGACTGTGGTAGCCTTGACAGTATATCCGAAGGTGCGGGAGAGGCAGGTGTTG
*****	*****
PCVPK-15	AAGATACCCGTCTTCGGGCCATCTGTAAACGGTTCTGAAGGCAGGTGCCCCAATAT
IMP999-ECO	AAGATGCCATTTCCTCCAAACGGTAGCGGTGGC-GGGGGTGGC-CGAGCCAGGGGC
IMP1010-ST	AAGATGCCATTTCCTCCAAACGGTAGCGGTGGC-GGGGGTGGC-CGAGCCAGGGGC
IMP1011-48	AAGATGCCATTTCCTCCAGCGGTAAACGGTAGCGGTGGC-GGGGGTGGC-CGAGCCAGGGGC
IMP1011-48	AAGATGCCATTTCCTCCAGCGGTAAACGGTAGCGGTGGC-GGGGGTGGC-CGAGCCAGGGGC
*****	*****
PCVPK-15	GGTCTTCTCCGGAGGATGTTCCAAGATGGCTGGGGGGGGTCTTCTGCGGTAA
IMP999-ECO	GG---CGGCGGAGGATCTGGCAAGATGGCTGGGGGGGGTCTTCTGCGGTAA
IMP1010-ST	GG---CGGCGGAGGATCTGGCAAGATGGCTGGGGGGGGTCTTCTGCGGTAA
IMP1011-48	GG---CGGCGGAGGATCTGGCAAGATGGCTGGGGGGGGTCTTCTGCGGTAA
IMP1011-48	GG---CGGCGGAGGATCTGGCAAGATGGCTGGGGGGGGTCTTCTGCGGTAA
*****	*****
PCVPK-15	CGCCTCTGGCACGTATCCTATAAAAGTGAAGAAGTCGCTGCTGTAGTATTACCA
IMP999-ECO	CGCCTCTGGATACGTATAGC-TGAAACGAAAGAAGTCGCTGTAA--AGTATTACCA
IMP1010-ST	CGCCTCTGGATACGTATAGC-TGAAACGAAAGAAGTCGCTGTAA--AGTATTACCA
IMP1011-48	CGCCTCTGGATACGTATATC-TGAAACGAAAGAAGTCGCTGTAA--AGTATTACCA
IMP1011-48	CGCCTCTGGATACGTATATC-TGAAACGAAAGAAGTCGCTGTAA--AGTATTACCA
*****	*****
PCVPK-15	GCGCACTTCGGCAGCGCAGCACCTCGGCAGCG--TCAGTG--AAAATGCCAACAGAA
IMP999-ECO	GCGCACTTCGGCAGCGCAGCACCTCGGCAGCACCTCGGCAGCAGCAACATGCCAACAGAA
IMP1010-ST	GCGCACTTCGGCAGCGCAGCACCTCGGCAGCACCTCGGCAGCAGCAACATGCCAACAGAA
IMP1011-48	GCGCACTTCGGCAGCGCAGCACCTCGGCAGCACCTCGGCAGCAGCAACATGCCAACAGAA
IMP1011-48	GCGCACTTCGGCAGCGCAGCACCTCGGCAGCACCTCGGCAGCAGCAACATGCCAACAGAA

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FIG.5B

PCVPK-15 -----AAGCGGCCCGCAACCCATAAGAGGTGGGTGTTCACCCCTAATAATCCCTC
IMP999-ECO GAATGGAAGAACGGACCCAAACCACATAAAAGTGGGTGTTCACGCTGAATAATCCCTC
IMP1010-ST GAATGGAAGAACGGACCCAAACCACATAAAAGTGGGTGTTCACGCTGAATAATCCCTC
IMP1011-48 GAATGGAAGAACGGACCCAAACCACATAAAAGTGGGTGTTCACGCTGAATAATCCCTC
IMP1011-48 GAATGGAAGAACGGACCCAAACCACATAAAAGTGGGTGTTCACGCTGAATAATCCCTC

PCVPK-15 CGAGGAGGAGAAAACAAAATACGGGAGCTTCCAATCTCCCTTTGATTATTTGTTG
IMP999-ECO CGAACGAGGCCAAGAAAATACGGGAGCTCCCAATCTCCCTATTGATTATTTATTGT
IMP1010-ST CGAACGAGGCCAAGAAAATACGGGAGCTCCCAATCTCCCTATTGATTATTTATTGT
IMP1011-48 CGAACGAGGCCAAGAAAATACGGGATCTCCAATATCCCTATTGATTATTTATTGT
IMP1011-48 CGAACGAGGCCAAGAAAATACGGGATCTCCAATATCCCTATTGATTATTTATTGT

PCVPK-15 CGGAGAGGAAGGTTGGAGGAGGGTAGAACTCCTCACCTCAGGGGTTGCGAATTTGCG
IMP999-ECO TGGCGAGGAGGGTAATGAGGAAGGACGAAACACCTCACCTCAGGGGTTGCGTAATTTGCG
IMP1010-ST TGGCGAGGAGGGTAATGAGGAAGGACGAAACACCTCACCTCAGGGGTTGCGTAATTTGCG
IMP1011-48 TGGCGAGGAGGGTAATGAGGAAGGACGAAACACCTCACCTCAGGGGTTGCGTAATTTGCG
IMP1011-48 TGGCGAGGAGGGTAATGAGGAAGGACGAAACACCTCACCTCAGGGGTTGCGTAATTTGCG

PCVPK-15 TAAGAAGCAGACTTTAACAGGTGAAGTGGTATTTGGTGCCTGCACATCGAGAA
IMP999-ECO GAAGAACGAAACTTTAACAGGTGAAGTGGTATTTGGTGCCTGCACATCGAGAA
IMP1010-ST GAAGAACGAAACTTTAACAGGTGAAGTGGTATTTGGTGCCTGCACATCGAGAA
IMP1011-48 GAAGAACGAGACTTTAACAGGTGAAGTGGTATTTGGTGCCTGCACATCGAGAA
IMP1011-48 GAAGAACGAGACTTTAACAGGTGAAGTGGTATTTGGTGCCTGCACATCGAGAA

PCVPK-15 AGCGAAAGGAACCGACCAGCAGAATAAGAATACTGCAGTAAGAACGCCACATACTTAT
IMP999-ECO AGCCAAAGGAACGTGATCAGCAGAATAAGAATACTGCAGTAAGAACGCCACATACTTAT
IMP1010-ST AGCCAAAGGAACGTGATCAGCAGAATAAGAATACTGCAGTAAGAACGCCACATACTTAT
IMP1011-48 AGCGAAAGGAACAGATCAGCAGAATAAGAATACTGCAGTAAGAACGCCACATACTGAT
IMP1011-48 AGCGAAAGGAACAGATCAGCAGAATAAGAATACTGCAGTAAGAACGCCACATACTGAT

PCVPK-15 CGAGTGTGGAGCTCGCGAACCAGGGGAAGCGCAGCGACCTGTCTACTGCTGTGAGTAC
IMP999-ECO TGAATGTGGAGCTCTCGATCTCAAGGACAACGGAGTGACCTGTCTACTGCTGTGAGTAC
IMP1010-ST TGAATGTGGAGCTCTCGATCTCAAGGACAACGGAGTGACCTGTCTACTGCTGTGAGTAC
IMP1011-48 GGAGTGTGGAGCTCTAGATCTCAGGGACAACGGAGTGACCTGTCTACTGCTGTGAGTAC
IMP1011-48 GGAGTGTGGAGCTCTAGATCTCAGGGACAACGGAGTGACCTGTCTACTGCTGTGAGTAC

PCVPK-15 CCTTTGGAGACGGGTCTTGGTACTGTAGCCGAGCAGTCCCTGTAACGTATGTGAG
IMP999-ECO CCTGTTGGAGACGGGAGTCTGGTACCGTTGCAGAGCAGCACCCCTGTAACGTTGTGAG
IMP1010-ST CCTGTTGGAGACGGGAGTCTGGTACCGTTGCAGAGCAGCACCCCTGTAACGTTGTGAG
IMP1011-48 CCTGTTGGAGACGGGAGTCTGGTACCGTTGCAGAGCAGCACCCCTGTAACGTTGTGAG
IMP1011-48 CCTGTTGGAGACGGGAGTCTGGTACCGTTGCAGAGCAGCACCCCTGTAACGTTGTGAG

PCVPK-15 AAATTTCCGCGGGCTGGCTGAACCTTGAAAGTGAAGCGGGAAAGATGCAGCAGCGTGATTG
IMP999-ECO AAATTTCCGCGGGCTGGCTGAACCTTGAAAGTGAAGCGGGAAAGATGCAGAAGCGTGATTG
IMP1010-ST AAATTTCCGCGGGCTGGCTGAACCTTGAAAGTGAAGCGGGAAAGATGCAGAAGCGTGATTG
IMP1011-48 AAATTTCCGCGGGCTGGCTGAACCTTGAAAGTGAAGCGGGAAAGATGCAGAAGCGTGATTG
IMP1011-48 AAATTTCCGCGGGCTGGCTGAACCTTGAAAGTGAAGCGGGAAAGATGCAGAAGCGTGATTG

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FIG. 5C

PCVPK-15	TAATTTGCTGAGCCTAGGGACACCTACTGGAAAGCCTAGTAGAAATAAGTGGTGGATGG
IMP999-ECO	TAATTTGCAGACCCGAAACCACATACTGGAAACCACCTAGAAACAAGTGGTGGATGG
IMP1010-ST	TAATTTGCAGACCCGAAACCACATACTGGAAACCACCTAGAAACAAGTGGTGGATGG
IMP1011-48	TAATTTGCAGACCCGAAACCACATACTGGAAACCACCTAGAAACAAGTGGTGGATGG
IMP1011-48	TAATTTGCAGACCCGAAACCACATACTGGAAACCACCTAGAAACAAGTGGTGGATGG

PCVPK-15	TCTACTGAGACTGTGTGACCGGTATCATTGACTGTAGAGACTAAAGGGGTACTGTCC
IMP999-ECO	TCTACTGAGACTGTGTGATCGATATCATTGACTGTAGAGACTAAAGGTGGACTGTACC
IMP1010-ST	TCTACTGAGACTGTGTGATCGATATCATTGACTGTAGAGACTAAAGGTGGACTGTACC
IMP1011-48	TCTACTGAGACTGTGTGATCGATATCATTGACTGTAGAGACTAAAGGTGGACTGTACC
IMP1011-48	TCTACTGAGACTGTGTGATCGATATCATTGACTGTAGAGACTAAAGGTGGACTGTACC
<hr/>	

PCVPK-15	TTTTTTGGCCCGCAGTATTGATTACCAGCAATCAGGCCCCCAGGAATGGTACTCCTC
IMP999-ECO	TTTTTTGGCCCGCAGTATTCTGATTACCAGCAATCAGACCCGTTGAATGGTACTCCTC
IMP1010-ST	TTTTTTGGCCCGCAGTATTCTGATTACCAGCAATCAGACCCGTTGAATGGTACTCCTC
IMP1011-48	TTTTTTGGCCCGCAGTATTCTGATTACCAGCAATCAGACCCGTTGAATGGTACTCCTC
IMP1011-48	TTTTTTGGCCCGCAGTATTCTGATTACCAGCAATCAGACCCGTTGAATGGTACTCCTC

PCVPK-15 AACTGCTGTCCCAGCTGTAGAAGCTCTATCGGAGGATTACTACTTGGCAATTGGAA
IMP999-ECO AACTGCTGTCCCAGCTGTAGAAGCTCTATCGGAGGATTACTTCCCTGGTATTGGAA
IMP1010-ST AACTGCTGTCCCAGCTGTAGAAGCTCTATCGGAGGATTACTTCCCTGGTATTGGAA
IMP1011-48 AACTGCTGTCCCAGCTGTAGAAGCTCTTATCGGAGGATTACTTCCCTGGTATTGGAA
IMP1011-48 AACTGCTGTCCCAGCTGTAGAAGCTCTTATCGGAGGATTACTTCCCTGGTATTGGAA

PCVPK-15	GAATGCTACAGAACATCCACGGAGGAA	-----	GGGGGCCAGTCACCC	TTTCCCCCCC
IMP999-ECO	GAATGCTACAGAACATCCACGGAGGAA	-----	GGGGGCCAGTCACCC	TTTCCCCCCC
IMP1010-ST	GAATGCTACAGAACATCCACGGAGGAA	-----	GGGGGCCAGTCACCC	TTTCCCCCCC
IMP1011-48	GAATGCTACAGAACATCCACGGAGGAA	-----	GGGGGCCAGTCACCC	TTTCCCCCCC
IMP1011-48	GAATGCTACAGAACATCCACGGAGGAA	-----	GGGGGCCAGTCACCC	TTTCCCCCCC

PCVPK-15	CTGTCGCCCTTCCATATAAAATAAAATTACTGAGTCCTTTGTTATCACATCGTAATG
IMP999-ECO	ATGCCCTGAATTCCATATGAAATAAAATTACTGAGTCCTTTT---TATCACTTCGTAATG
IMP1010-ST	ATGCCCTGAATTCCATATGAAATAAAATTACTGAGTCCTTTT---TATCACTTCGTAATG
IMP1011-48	ATGCCCTGAATTCCATATGAAATAAAATTACTGAGTCCTTTT---TATCACTTCGTAATG
IMP1011-48	ATGCCCTGAATTCCATATGAAATAAAATTACTGAGTCCTTTT---TATCACTTCGTAATG

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FIG. 5D

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

GT~~TTTTTATT-TTTATTTA---TTA---GAGGGTCTTTAGGATAAATTCTCTGAATTG~~
GT~~TTTTTATTATTCA~~TTAGGTTAAGTGGGGGTCTTTAAGATTAATTCTCTGAATTG~~~~
GT~~TTTTTATTATTCA~~TTAGGTTAAGTGGGGGTCTTTAAGATTAATTCTCTGAATTG~~~~
GT~~TTTTTATTATTCA~~TTAGGTT-AAGTGGGGTCTTTAAGATTAATTCTCTGAATTG~~~~
GT~~TTTTTATTATTCA~~TTAGGTT-AAGTGGGGTCTTTAAGATTAATTCTCTGAATTG~~~~

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

TACATAAAATAGTCAGCCTTACCA~~CATAATTGGCCTGTGGCTGC-ATTGGAGCGCAT~~
TACATACATGGT~~TACACGGATATTGTAGTCCTGG-TCGTATATACTGTTTCGAACGCAG~~
TACATACATGGT~~TACACGGATATTGTAGTCCTGG-TCGTATTACTGTTTCGAACGCAG~~
TACATACATGGT~~TACACGGATATTGTATTTCCTGG-TCGTATATACTGTTTCGAACGCAG~~
TACATACATGGT~~TACACGGATATTGTATTTCCTGG-TCGTATATACTGTTTCGAACGCAG~~

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

AGCGGAGGC~~CTGTGCTCGACATTGGTGTGGTATTAAATGGGCCACAGCTGGTTTC~~
TGCGGAGGC~~CTACGTGGTCCACATTCTAGAGGTTGTAGCCTAGCCAAAGCTGATTCC~~
CGCGGAGGC~~CTACGTGGTCCACATTCCAGAGGTTGTAGTCTAGCCAAAGCTGATTCC~~
TGCGGAGGC~~CTACGTGGTCAATTCCAGCAGTTGTAGTCTAGCCACAGCTGGTTTC~~
TGCGGAGGC~~CTACGTGGTCAATTCCAGTAGTTGTAGTCTAGCCACAGCTGATTTC~~

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

TTTTATTATTGGT~~GGAACCAATCAATTGGTCCAGCTCAGGTTGGGGTGAAGT~~
TTTGTTATTGGT~~GGAAAGTAATCAATAGTGGACTCAAGAACAGGTTGGGTGTGAAGT~~
TTTGTTATTGGT~~GGAAAGTAATCAATAGTGGACTCAAGAACAGGTTGGGTGTGAAGT~~
TTTGTTGTTGGT~~GGAAAGTAATCAATAGTGGAACTAGGACAGGTTGGGGTAAAGT~~
TTTGTTGTTGGT~~GGAAAGTAATCAATAGTGGAACTAGGACAGGTTGGGGTAAAGT~~

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

ACCTGGAGTGGTAGGT~~AAAGGGCTGCCTTATGGTGTGGCGGGAGGAGTAGTTAATATAGG~~
AACGGGAGTGGTAGGAGAAGGGT~~GGGGATTGTATGGCGGGAGGAGTAGTTACATATG~~
AACGGGAGTGGTAGGAGAAGGGT~~GGGGATTGTATGGCGGGAGGAGTAGTTACATATG~~
AGC~~GGGAGTGGTAGGAGAAGGGCTGGTTATGGTATGGCGGGAGGAGTAGTTACATAGG~~
AGC~~GGGAGTGGTAGGAGAAGGGCTGGTTATGGTATGGCGGGAGGAGTAGTTACATAGG~~

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

GGTCATAGGCCAAGTTGGT~~GAGGGGTTACAAAGTTGGCATCCAAGATAACAAACAGTGG~~
GGTCATAGGT~~TAGGGCTGTGCCCTTGTACAAAGTTATCATCTAGAATAACAGCAGTGG~~
GGTCATAGGT~~TAGGGCTGTGCCCTTGTACAAAGTTATCATCTAGAATAACAGCAGTGG~~
GGTCATAGGT~~GAGGGCTGTGCCCTTGTACAAAGTTATCATCTAGAATAACAGCAGTGG~~
GGTCATAGGT~~GAGGGCTGTGCCCTTGTACAAAGTTATCATCTAGAATAACAGCAGTGG~~

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

ACCCAA~~CACCTCTTGTATTAGAGGTGATGGGTCTCTGGGGTAA~~
AGCCC~~ACTCCCTATCACCTGGGTGATGGGGAGCAGGCCAG~~
AGCCC~~ACTCCCTATCACCTGGGTGATGGGGAGCAGGCCAG~~
AGCCC~~ACTCCCTGTCACCTGGGTGATGGGGAGCAGGCCAG~~
AGCCC~~ACTCCCTGTCACCTGGGTGATGGGGAGCAGGCCAG~~

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FIG.6A

1 GAATTCAACC TTAACCTTTT TTATTCTGTA gTATTCAAAG GGTATAaAgA
51 TTTTGTGCGT CCCCCCTCCC GGGGGAAACAA AGTCgTCAAT ATTAAATCTC
101 ATCATGTCCA CCGCCCAGGA GGGCGTTCTG ACTGTGGTAg CCTTGACAGt
151 ATATCCGAAG GTGCGGGAGA rGCGGGTGTT GAAAATGCCA TTTTCCTTC
201 TCCAACGGTA GCGGTGGCGG GGGTGGACmA nCCAcgGGCG GCGGGGGAWG
251 ATCTGGCCAA GATGGCTGCG GGGGCGGTGT CTTCTTCTGC GGTAACGCCT
301 CCTTGGATAC GTCATAgCTG AAAACGAAAG AAGTGCCTG TAaGTATTAC
351 CAGCGCACTT CGGCAGCGGC AGCACCTCGG CAGCaCCTCA GCAGCAACAT
401 GCCCAGCAAG AAGAATGGAA GAAGCGGACC CCAACCACAT AAAAGGTGGG
451 TGTTCACGCT GAATAATCCT TCCGAAGACG AGCGCAAGAA AATACGGGAG
501 CTCCCCaATCT CCCTATTGTA TTATTTTATT GTTGGCGAGG AGGGTwwTGA
551 gGAAnGACgA ACACCTCACC TCCAGGGTT CGCtAATTtT GTGAAGAAGC
601 aaACTTtTAA TAAAGTGAAG TGGTATTGG GTGCCCGCTG CCACATCGAG
651 AAAGCCAAAG GAACTGATCA GCAGAATAAA GAATATTGCA GTAAAGAAGG
701 CAACTTACTT ATTGAATGTG GAGCTCCTCG ATCTCAAGGA CAAAGGAGTG
751 ACCTGTCTAC TGCTGTGAGT ACCTTGTGG AGAGCGGGAG TCTGGTGACC
801 GTTGCAGAGC AGCACCCCTGT AACGTTGTC AGAAATTCC GCGGGCTGGC
851 TGAACTTTG AAAGTGAGCG GGAAAATGCA GAAGCGTGTAT TGGAAAGACCA
901 ATGTACACGT CATTGTGGGG CCACCTGGGT GTGGTAAAAG CAAATGGGCT
951 GCTAATTtTG CAGACCCGGAA AACCACATAC TGGAAACCAC CTAGAAACAA
1001 GTGGTGGGAT GGTTACCATG GTGAAGAAGT GTTGTATTATT GATGACTTTT
1051 ATGGCTGGCT GCCGTGGGAT GATCTACTGA GACTGTGTGA TCGATATCCA
1101 TTGACTGTAG AGACTAAAGG TGGAACGTGA CCCCCNNNNNGG CCCGCAGTAT
1151 TCTGATTACC AGCAATCAGA CCCCCGtCGGA ATGGTACTCC TCAACTGCTG
1201 TCCCAGCtGT AGAAGCTCTC TATCGGAGGA tTACTTCCTT GGTATTTtGG
1251 AaGAATGCTA CAGAACAAATC CACGGAGGAA GGGGGCCAGT TnGTCACCCt

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1301 TTCCCCCTGAAT TTCCATATGA AATAAATTAC TGAGTCCTTT
1351 TTATCACTTC GTAATGGTTT TTATTATTCA TTTAGGGTTT AAGTGGGGG
1401 TCTTTAAGAT TAAATTCTCT GAATIGTACA TACATGGTTA CACGGATATT
1451 GTAGCCTGG TCGTATATAC TGTTTCGAA CGCAGTGCCG AGGCCTACGT
1501 GGTCCACATT TCTAGAGGTT GTAGCCTCA GCCAAGCTG ATTCCCTTTG
1551 TTATTTGGTT GGAAGTAATC AATAGTGGAG TCAAGAACAG GTTGGGTGT
1601 GAAGTAACGG CAGTGGTAGG AGAAGGGTTG GGGGATTGTA TGGCGGGAGG
1651 AGTAGTTAC ATATGGGTCA TAGGTTAGGG CTGTGGCCTT TGTACAAAG
1701 TTATCATCTA GAATAACAGC AGTGGAGCCC ACTCCCCAT CACCCCTGGGT
1751 GATGGGGAG CAGGGCCA

FIG. 6B

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FIG.7B

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FIG. 7C

759 749 739 729 719 709
 8con.s AGTAGACAGGTCACTCCGTTGCTCCTTGAGATCGAGGAGCTCCACATTCAATAAGTAAGTT
 ||||| ||||| ||||| ||||| ||||| |||||
 pcveco AGTAGACAGGTGCGCTTCCCCTGGTCCGCGGAGCTCCACACTCGATAAGTATGTG
 1020 1030 1040 1050 1060 1070

699 689 679 669 659 649
 8con.s GCCTTCTTACTGCAATATTCTTTATTCTGCTGATCAGTCCCTTGGCTTCTCGATGTG
 ||||| ||||| ||||| ||||| ||||| |||||
 pcveco GCCTTCTTACTGCACTTATTCTGCTGGTCCCTTCGCTTCTCGATGTG
 1080 1090 1100 1110 1120 1130

639 629 619 609 599 589
 8con.s GCAGCGGGCACCCAAATACCACTTCACTTATTAAAAGTTGCTTCTCACAAAATTAGC
 ||||| ||||| ||||| ||||| ||||| |||||
 pcveco GCAGCGGGCACCCAAATACCACTTCACCTGTTAAAAGTCTGCTTCTAGCAAAATTAGC
 1140 1150 1160 1170 1180 1190

579 569 559 549 539 529
 8con.s GAACCCCTGGAGGTGAGGTGTTCTCCTCAWACCCTCCTCGCCAACAATAAAAATA
 ||||| ||||| ||||| ||||| ||||| |||||
 pcveco AAACCCCTGGAGGTGAGGAGTTCTACCCCTTCCAAACCTCCTCTCCGCAAACAAAATA
 1200 1210 1220 1230 1240 1250

519 509 499 489 479 469
 8con.s ATCAAATAGGGAGATTGGGAGCTCCCGTATTTTCTTGCCTCGTCTCGGAAGGATTATT
 ||||| ||||| ||||| ||||| ||||| |||||
 pcveco ATCAAAAAGGGAGATTGGAAGCTCCCGTATTTTCTTCTCCTCTCGGAAGGATTATT
 1260 1270 1280 1290 1300 1310

459 449 439 429 419 409
 8con.s CAGCGTGAACACCCACCTTTATGTGGTTGGGTCCGCTTCTCCATTCTTCTTGCTGGG
 ||||| ||||| ||||| ||||| ||||| |||||
 pcveco AAGGGTGAACACCCACCTCTTATGGGGTTCGGGCCGCTT-----TTCTTGCTGG
 1320 1330 1340 1350 1360

399 389 379 369 359 349
 8con.s CATGTTGCTGCTGAGGTGCTGCCGAGGTGCTGCCGTGCCGAAGTGCCTGGTAATACT
 ||||| ||||| ||||| ||||| ||||| |||||
 pcveco CATTTT--CACTGA--CGCTGCCGAGGTGCTGCCGTGCCGAAGTGCCTGGTAATACTA
 1370 1380 1390 1400 1410

339 329 319 309 299 289
 8con.s -TACAGCGCACTCTTTC-GTTTCACTATGACCTATCCAAGGAGGCCATTACCGCAGAA
 ||||| ||||| ||||| ||||| ||||| |||||
 pcveco CAGCAGCGCACTCTTCACTTTATAGGATGACCTGGCCAAGGAGGCCATTACCGCAGAA
 1420 1430 1440 1450 1460 1470

279 269 259 249 239 229
 8con.s GAAGACACCGCCCCCGAGCCATCTTGGCCAGATCWTCCGCCGCCGGNTKGTCC
 ||||| ||||| ||||| ||||| ||||| |||||
 pcveco GAAGGACCCGCCCGAGCCATCTTGGAAACATCCTCCGGAGAAGACCATATTGGCAC
 1480 1490 1500 1510 1520 1530

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FIG. 7D

219	209	199	189	179	
8con.s ACCCCCCGCC-----	ACCGCTACCGTGGAGAAGGAAAAATGGCATTTCACACCCGC				
pcveco					
1540	1550	1560	1570	1580	1590
169	159	149	139	129	119
8con.s YTCTCCCGCACCTCGGATATACTGTCAAGGCTACCACAGTCAGAACGCCCTCTGGCG					
pcveco :					
1600	1610	1620	1630	1640	1650
109	99	89	79	69	59
8con.s GTGGACATGATGAGATTTAATATTGACGACTTTGTTCCCCGGGAGGGGGACCAACAAA					
pcveco					
1660	1670	1680	1690	1700	1710
49	39	29	19	9	
8con.s ATCTTTATACCCCTTGAATACTACAGAATAAAAAGGTTAAGGTT					
pcveco					
1720	1730	1740	1750		